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DESIGN
AND
REPRESENTATION

A HANDBOOK
FOR TEACHERS

1910
NEW YORK STATE
EDUCATION DEPARTMENT

Plate I

DESIGN

AND

REPRESENTATION

1910

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FREE-HAND DRAWING

INTRODUCTION

This handbook has been prepared for the purpose of assisting teachers of drawing in the work of instruction as outlined in the syllabus for secondary schools.

In preparing the syllabus the subject of free-hand drawing, including representation and design, has been treated independently from mechanical drawing. It is impossible to state in the treatment of these subjects just what requirements or limitations shall be set for each kind of examination named in the syllabus. The work is too elastic in its nature to permit of such close limitations. All the principles applying to a most difficult problem will frequently be present in a simple sketch. The preparation, therefore, of questions for any examination or the practice of the subject must be based on reason and common sense, considering the nature and difficulty of the phase of the subject in hand.

Drawing is primarily a means of expression. Satisfactory results can not be expected if the practice in drawing is confined to the drawing class. Like writing, it should be applied generally in school work, and abundant opportunity may be found in almost every subject. Scenes described in the reading lessons may be illustrated, cuts found in the textbooks may be reproduced, specimens and apparatus studied in the science classes may be drawn, the figures referred to in mathematics may be constructed, etc. The principles of arrangement, composition and design should be applied to all work, and attention given to arrangement and to placing of sketches and written matter in notebooks. Practice in drawing out of school hours should be encouraged. A home sketchbook will afford recreation, while at the same time it will lead the pupil to observe closely and record graphically what he sees. While the quality of line and finish

of the picture depends on skill in execution, it must not be assumed that drawing is wholly a matter of hand training.

Conception, thought, knowledge and a real desire to draw, whether it be in line, light and shade, or color are of greatest importance. The ability to express by drawings depends in a large measure on the development of the imagination, the power of carrying in the mind a correct and vivid picture of the thing to be represented. The study of the object is essential, but the student should also learn to draw without having it before him.

In the making of this syllabus one object has been ever borne in mind which should likewise be the aim of every teacher. This is thoroughness in a few essential things. The failure specifically to mention or prescribe subjects more or less popular such as pose drawing, figure illustration, artistic anatomy, landscape composition or the history of painting, sculpture, architecture or ornament must not be taken as indicative of a lack of proper appreciation of these things. There is nothing to prevent the study of these subjects to any extent provided there has been sufficient insistence in the small amount of time devoted to drawing upon the absolute fundamentals of design and representation with the resultant ability to draw or design well a few simple but important things.

In the teaching of art history there is no method more practical and profitable than that of immediate and regular illustration of the daily problems in representation and design with photographs, plates, casts and other facsimiles of the best corresponding objects in the history of art. Pictures and objects of the best art periods presented in connection with the current problems of the classroom acquire a meaning quite different from that which is possible when they are given merely in a consecutive course, valuable as this latter method may be, if the teacher finds time for it.

It should be remembered that this handbook is primarily an aid to the understanding of the syllabus, a view of the field to be covered, and can not be considered in any sense a textbook. Statements which follow and which may seem to contradict this idea must be regarded as general guides to a clearer classification and carry-

ing out of the work, and should not be accepted as substitutes for thorough courses of instruction which teachers are presumed to have had from art schools or acknowledged textbooks on the subjects.

General Divisions of the Subject

The subject of free-hand drawing divides itself into two distinct parts. These are design and representation.

Design treats of the originating of forms of objects and of their decoration according to the laws of use and beauty.

Representation deals with the apparent characteristics of objects. It includes the study of proportion and the principles of perspective and composition.

While the principles governing in one of these divisions finds application in many problems of the other, the two branches are thoroughly distinct and are therefore so treated in their respective chapters which follow.

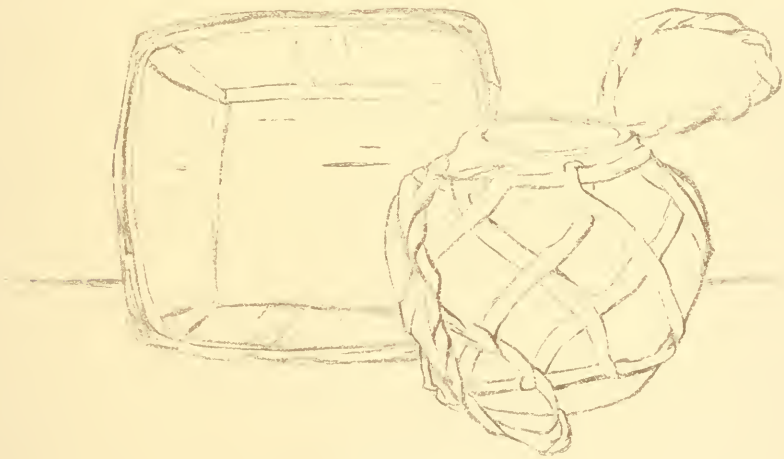

FIGURE I

Conspectus of the Subject of Design

- Design: Originating forms and enrichment of objects according to the laws of use and beauty
  - Use
    - Emphasis of purpose
    - Emphasis of material
    - Emphasis of construction or method of production
  - Beauty
    - Proportion, relation of sizes
    - Contour, relation of shapes
    - Tone, relation of values and colors
    - Abstract motives
    - Conventional motives
      - Three dimensions: Designing of objects involving length, breadth and thickness
        - Vessels
        - Utensils
        - Apparel
        - Furniture
        - Architecture
          - Designs for unlimited areas. "All over" repeats or surface patterns
      - Two dimensions: Designing of objects involving length and breadth. Enrichment of surfaces
        - The decorative motive, figure or unit
          - Designs for limited areas: (a) borders, (b) inclosed areas, (c) lettering
        - Systems of arrangement

DESIGN

1 The subject of design divides itself into two broad classes, which may be called respectively, design in three dimensions, and design in two dimensions. The first is design in the round or the originating of real objects having length, breadth and thickness, the second the planning of such objects as involve length and breadth only and of various methods of surface enrichment.

2 The purpose of all design in its broadest sense is twofold: it must produce an article of use and make it as beautiful as possible. These vital functions of use and beauty are each of them in turn subject to three definite principles.

Use

3 The three vital principles affecting the use of an object are as follows:

a The form taken by any object should be such that the use and purpose of the object is not concealed or disguised, but rather revealed and enhanced.

b The material of which an article is made should be that most suitable for the purpose and the characteristics and peculiarities of the material should frankly appear. Under no conditions should it masquerade as another material.

c The method of construction should be frank, clear and workmanlike, speaking unmistakably of the tool and process as well as of the form and material.

4 These three principles are closely related and mutually dependent. All influence the form of the object, and all exercise a strong effect on the decoration of that form.

Beauty

5 Under the head of beauty must be considered: (*a*) Proportion, or the relation of sizes; (*b*) contour, or the relation of shapes; (*c*) tone, or the relation of neutral values and of colors.

a Proportion embodies and signifies more than is usually considered under that head. Proportion does not mean size as is often supposed, but relationship of sizes. Beautiful or ugly proportions alone make or mar the beauty of an article which may bear no ornament whatsoever. Esthetic analysis of a multitude of natural or artificial objects will prove that the element of proportion is one of the most vital sources of whatever beauty they may possess. Considering the unlimited range of forms in nature and the arts, it would seem almost impossible to reduce the idea of proportion to a very brief statement, yet an analysis of large numbers of widely varied types leads to the conclusion that a ratio approximating that of two parts to three occurs most frequently in forms whose beauty is unquestioned. The golden oblong [fig. 2] is a form showing a more delicate ratio of sizes which, however, reduced to simpler terms closely approximates our two-to-three proportion.

Other relations may be met with in many well designed objects, as, for example, the proportions of the square and the ratio of two parts to one and of five to eight.

b Contour is the defining visible edge or outline of an object. Such edges may be composed of straight or curved lines or their combinations. How to dispose the surfaces of a form so as to arrive at pleasing contours is one of the problems of the designer. The horizontal straight line suggests quiet, repose, inaction; the vertical line indicates vigor, support, life; while the oblique line gives the idea of motion. The curves at one's command include the circle, ellipse, oval, spirals and the parts or combinations of these.

The study of contour will be assisted by analysis of these types of lines, alone and in combination, and an observance of their use by masters of design in the most beautiful objects of industrial art. Knowledge of the types of lines mentioned above without ability to use them is as useless as oral repetition of perspective principles.

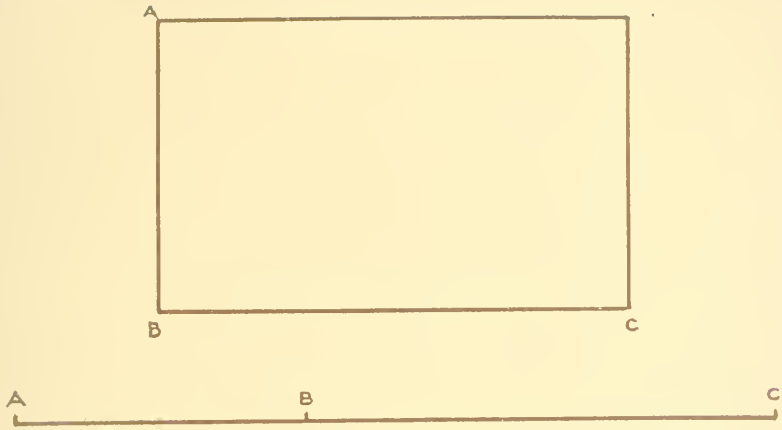

FIGURE 2

THE GOLDEN OBLONG

The golden or ideal oblong is built upon proportions to which mathematicians give the term of mean and extreme ratio. In the above line A C the ratio of A B to B C is as the ratio of B C to A C. If the line were divided into 100 parts such a division would very nearly approximate the proportion of 38 to 62. The ratios of 5 to 8 and 2 to 3 are both close to this extreme and mean ratio and give the designer great help in deciding the large proportions or subdivisions of any problem.

c Beauty is also revealed through tone. In the sense here meant tone refers to the effect of an object as to light and dark, and color. Our understanding of this subject and the method of teaching it have become much clearer in the last decade. Whether or not the method of presentation shall be by charts and scales of spectrum tones and values, copied by the pupils, or color analysis of natural objects or whatever other procedure, it should be possible to awaken in the high school pupil an appreciation of the difference between good and bad color relations. With a knowledge of the reasons for such differences should come an ability to devise and apply acceptable tone combinations.

6 The basic considerations which have just been reviewed under the two heads of use and beauty have universal application. The

teacher has to determine what the objects are to which the pupil's power of invention shall be directed.

Designing of Objects

7 In too many schools it has been the custom to consider design as limited to surface enrichment. The greater and more important field of real objects is hardly thought of, much less entered upon and worked. Hardly a home exists that does not suffer under its load of thoughtless and superfluous decorations. The consoling beauty of harmonious plain surfaces, good though simple proportions, useful yet graceful objects of service is yet to be realized by many a family complacent in its expensive taste and proud of its miscellaneous ornament.

8 If improvement is to come in these lines it must, to a great extent, arrive through intelligent and consistent instruction in the principles of design and good taste in real objects of common use. It is first of all a problem in three dimensions.

9 If this wide field is worthy of attention at all, it must be classified intelligently. Five broad divisions suggest themselves, viz, vessels, utensils, apparel, furniture, architecture. One problem in each of these is the minimum accomplishment that a teacher should get from each pupil at the end of a four year high school course. The order in which these subjects may be taken up, however, is not vital.

10 The teachers of industrial design should be themselves informed as to the construction of the objects which the pupils are to design. The properties of materials, methods of manufacture, and historic evolution of the article should be known and shown to the class. Right here should come the close connection of historic ornament with the practical work. Examples of the best work of the past in each specific line ought to be available in the form of photographs, colored plates or drawings while that work is being studied as a design problem.

11 Nothing could be better for successful teaching of constructive design than an actual working experience for the teacher. The best substitute would be demonstrations by a skilled workman

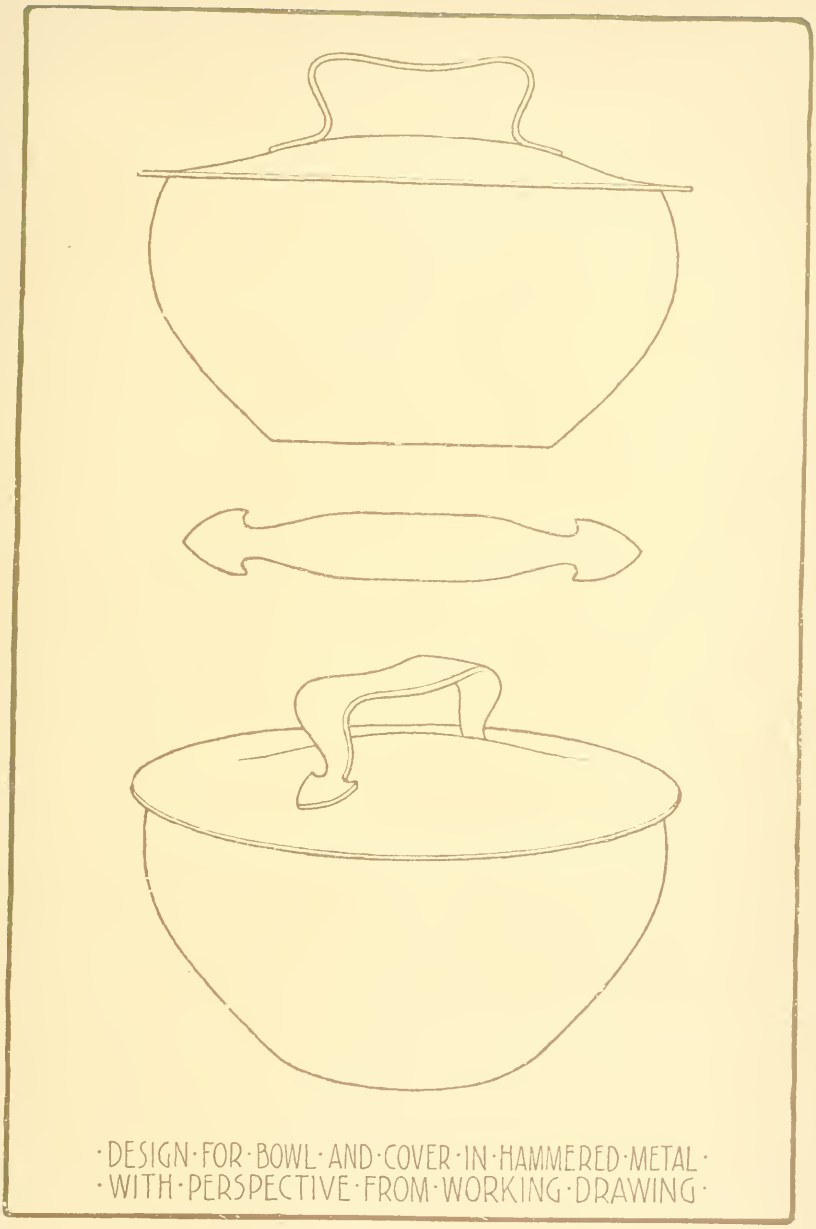

PLATE II

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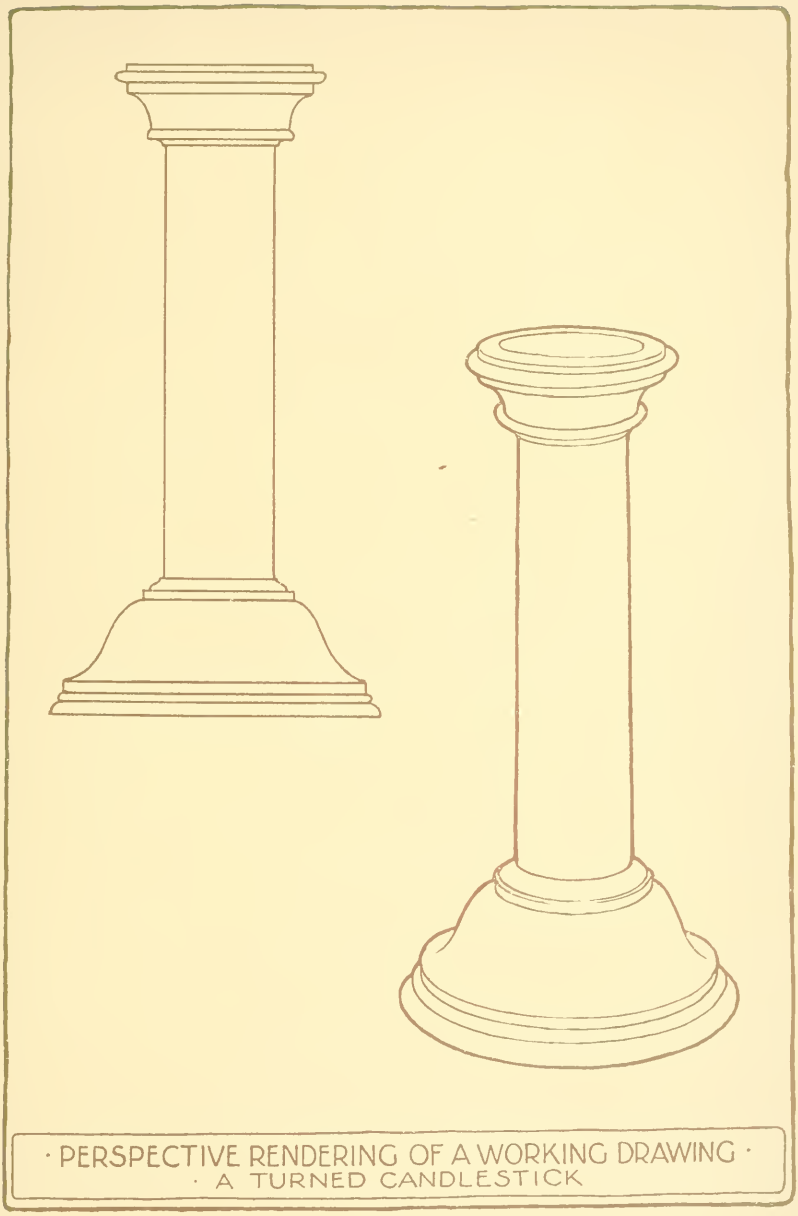
· PERSPECTIVE RENDERING OF A WORKING DRAWING ·
· A TURNED CANDLESTICK

Plate III

of the process under consideration coupled with study of good treatises of the subject.

12 By whatever process the knowledge is either gained by the teacher or given to the class, no instruction in design can be considered complete without attention being given to the important principles and processes involved in the crafts of typography and printing, bookbinding, leather work, pottery, metal and woodwork. Real knowledge of design is best gained in actual practice of the craft for which the design is intended. In the school in which such crafts can be actually practised will flourish the truest sort of design. The interdependence and mutual relationship of some of these crafts, as, for example, printing, bookbinding, and leather work, should be given fullest consideration.

13 With a knowledge of the characteristics and limitations of the crafts just mentioned we may intelligently take up in succession the several divisions mentioned as covering this general subject of constructive design. The following lists offer a wide range of choice for lesson material in the designing of objects.

Vessels

14 Under this head we have the broad classes of holders, dippers, pourers and drinking vessels, each demanding shapes and treatment adapted to its purpose and materials.

Utensils

15 In this division are the widely varied classes for lighting, eating and working. The lighting utensils include all forms of candelabra, candlestick, lamps and shades, lanterns, and fixtures for gas and electricity. Eating utensils include all forms of the knife, fork and spoon and articles for the serving of food; while utensils classed as working offer articles used in sewing, writing, reading, heating and other varied lines.

Apparel

16 Apparel covers the field of clothing and its many details with

the varied forms of jewelry including decorated pins, buttons, buckles, clasps, chains and fobs.

Furniture

17 This important class broadly divides itself into tables, seats, cabinets, frames and textile draperies, with their variations and combinations.

Architecture

18 This subject is so involved and technical that much less can be done with it in a high school course than with the other subjects enumerated. It is so important, however, to both the community and the individual that it must be given serious attention. Much of the work of architecture and all of the technical drawing involved is treated in the mechanical drawing syllabus. It falls, however, to the lot of the free-hand drawing teacher to present the esthetic side of the subject.

19 The growth of higher ideals of municipal beauty today makes an early introduction to the principles underlying true and beautiful building of great value to young people. The high school approach should be the understanding of what good architecture means in the simplest as well as the more pretentious building. The adaptation of the essentials of a structure to the local conditions imposed, the solving of problems of proportions and disposition of principal masses and details, the consideration of harmonious colors, all these suggest practical lessons leading to a permanent taste for good architecture. Interiors of buildings with all their possibilities of shaping, spacing, enriching and coloring on walls, ceilings, floors, doors, windows, mantels, stairs and other parts offer an exhaustless field.

20 Such problems should not be presented as unreal conditions but made to live by making them applicable to the local and home conditions of the pupil who works upon them.

21 Analysis of the esthetics of the most beautiful buildings as wholes or in their details should enter into this study of architecture from the free-hand drawing side. The study of the historic styles must here become a more living subject than ever before, and the

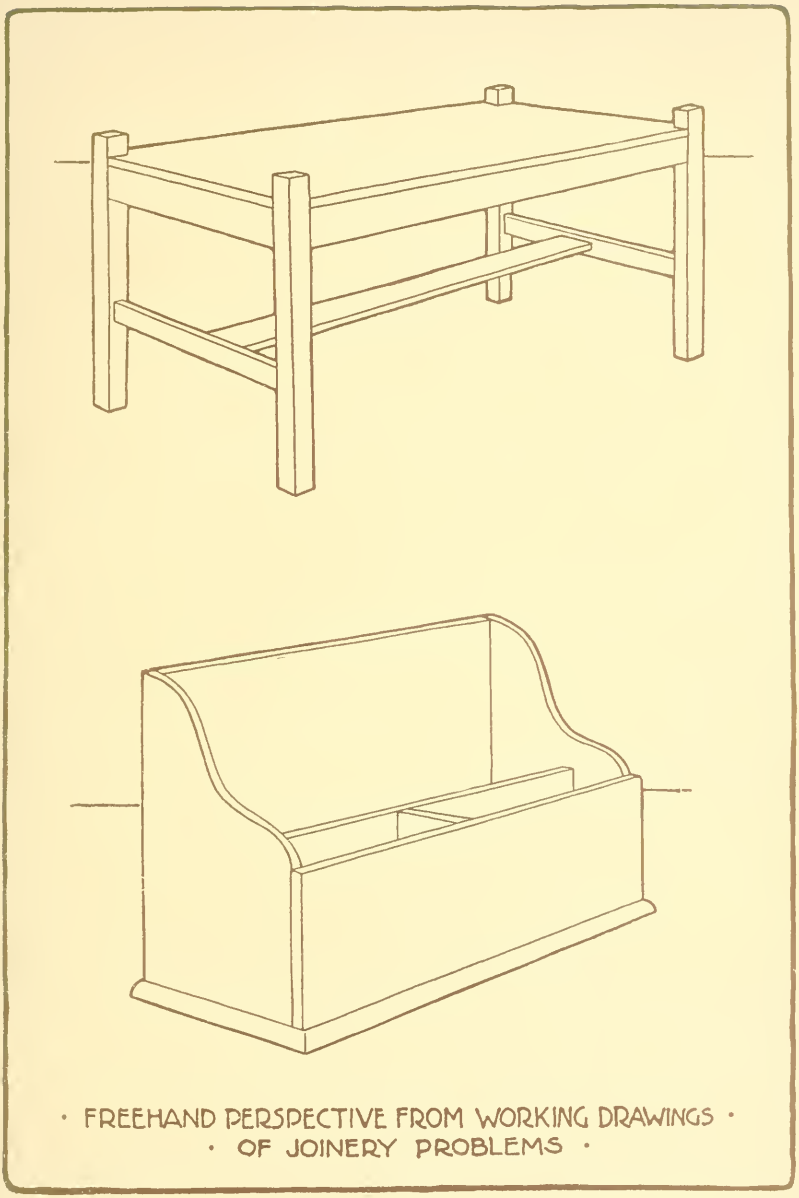
· FREEHAND PERSPECTIVE FROM WORKING DRAWINGS ·
· OF JOINERY PROBLEMS ·

Plate IV

Plate V

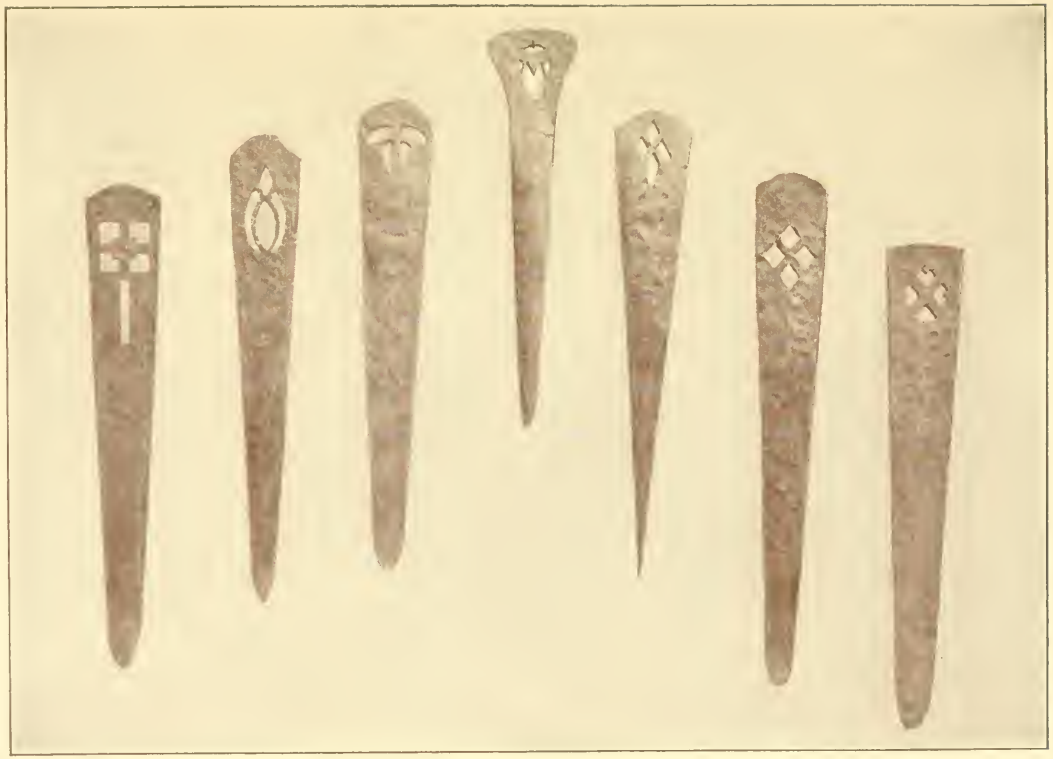

Plate V

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Plate VI

Plate VII

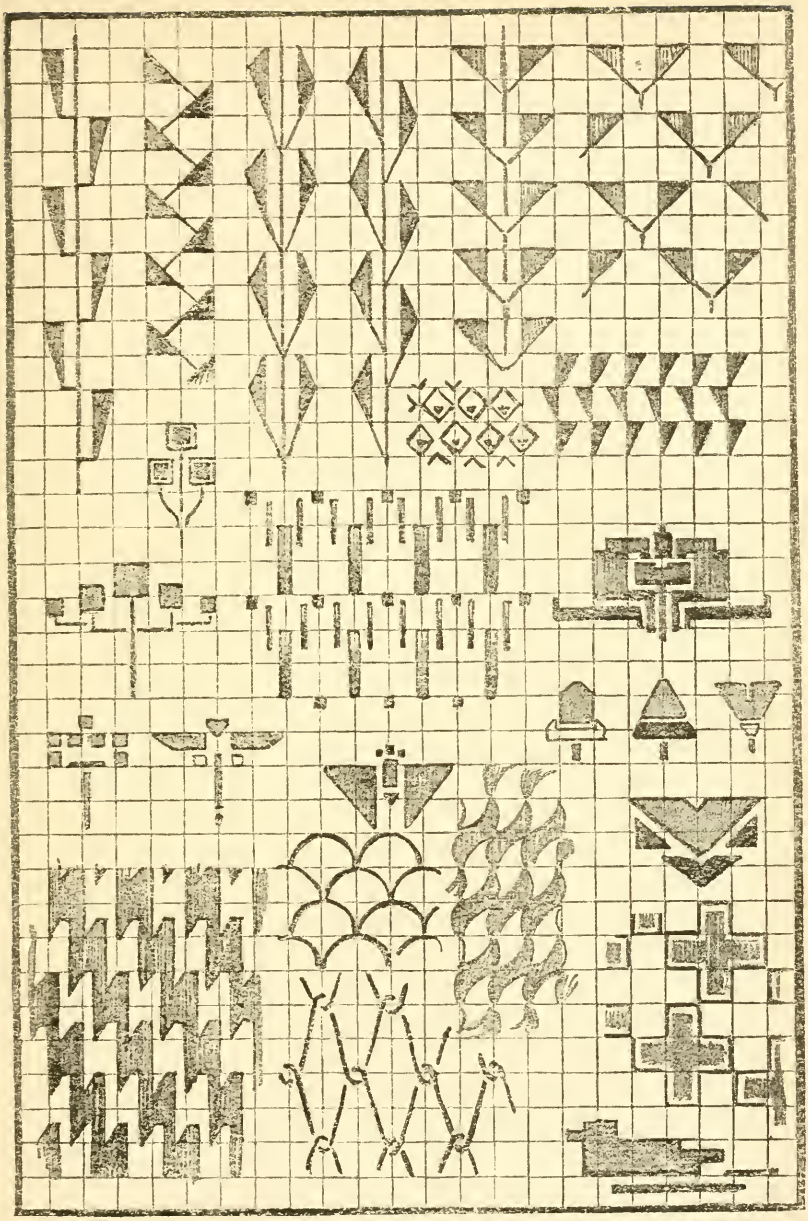

Plate VIII

most commonplace dwelling house or business building in a small town will serve to a live teacher as a basis for many vital lessons, and as a starting point for fascinating trips backward into the story of the evolution of our ordinary dwelling houses.

Surface Enrichment or Design in Two Dimensions

22 All decorative design employs one or the other of two factors. It must use either abstract shapes or forms conventionalized from nature.

23 Abstract design depends upon the arrangement of lines and areas without resemblance to natural forms. Conventional design uses nature forms adapted by revision and the elimination of details to the needs of the specific object in hand. Both types of design are found in all styles and in every age of art history.

24 Abstract design has its origin, to a large extent, in the exhaustless field of geometry. Quantities of historic motives in every period come from this source and innumerable patterns in the classroom can be obtained by working over rectangular and triangular networks or within other geometric limits [pl. VIII]. Abstract units may be arrived at by arbitrary combinations of lines of varied shapes, or by cutting up larger forms into smaller interesting areas.

25 Natural forms or their parts frequently suggest abstract decorative shapes. Examples of this are the curls of smoke or the swirls of water, the markings of wood and marble, the wrinkling of bark and withered leaves, or the surface details of innumerable natural objects. Such forms may be adapted and used quite apart from the spirit of conventionalized ornament.

Conventionalization

26 In confronting the subject of conventionalization we are met by a more difficult problem, yet one of the most important in dealing with successful decorative design.

27 Conventionalization is by no means a fixed or definite term. It applies alike to each of many degrees of decorative modification of nature. We may have merely approximate conventionalization

where there is but slight departure from the pictorial, or the treatment may be most formal and rigid in which only the last essentials of growth and shape are arranged with severest symmetry. Between these extremes may be found all degrees of freedom or formality. Foreshortened forms and hybrid combinations are frequent in many styles.

28 All of these difficult phases of ornament are quite beyond any but the most expert designers and not to be considered in high school work. There is no reason, however, why the simpler kinds of informal and formal conventionalization should not be understood and used by the pupils.

Informal conventionalization refers to the use of the perspective appearance of a natural form for decorative purposes. The ornamental value of such an appearance is dependent upon the rejection of small details, refinement of forms, clear edges and flattened values and color [fig. 3, pl. IX].

FIGURE 3
A conventional flower spray, informally treated
Modern German

Surface pattern of leaf units
informally conventionalized

Border of flower units
informally conventionalized

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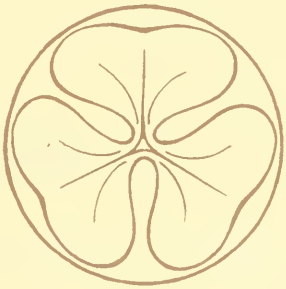

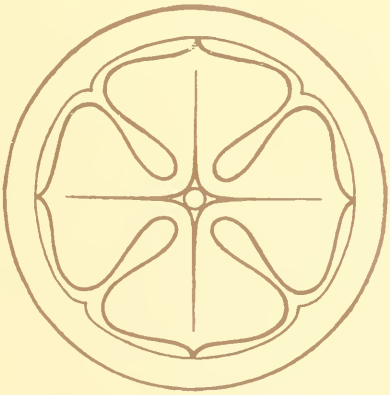

Formal conventionalization. Simple historic examples.

PLATE X

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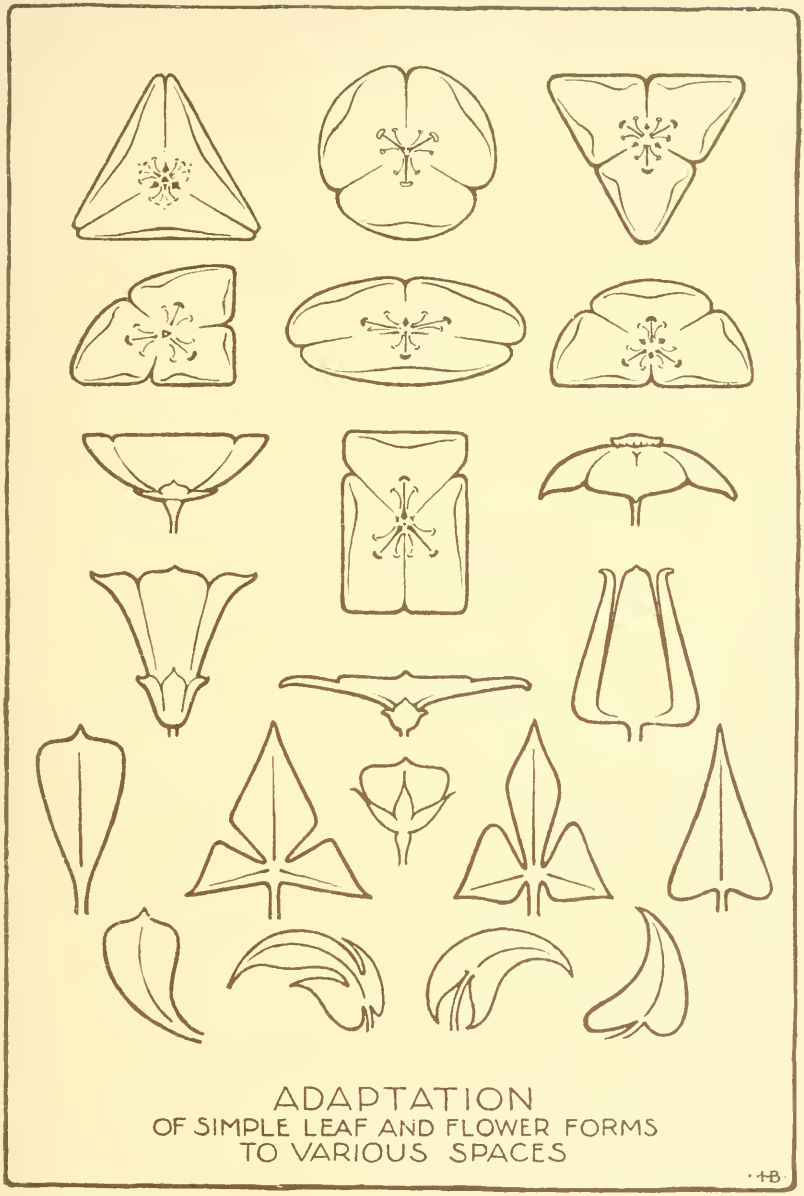
ADAPTATION
OF SIMPLE LEAF AND FLOWER FORMS
TO VARIOUS SPACES
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Plate XI

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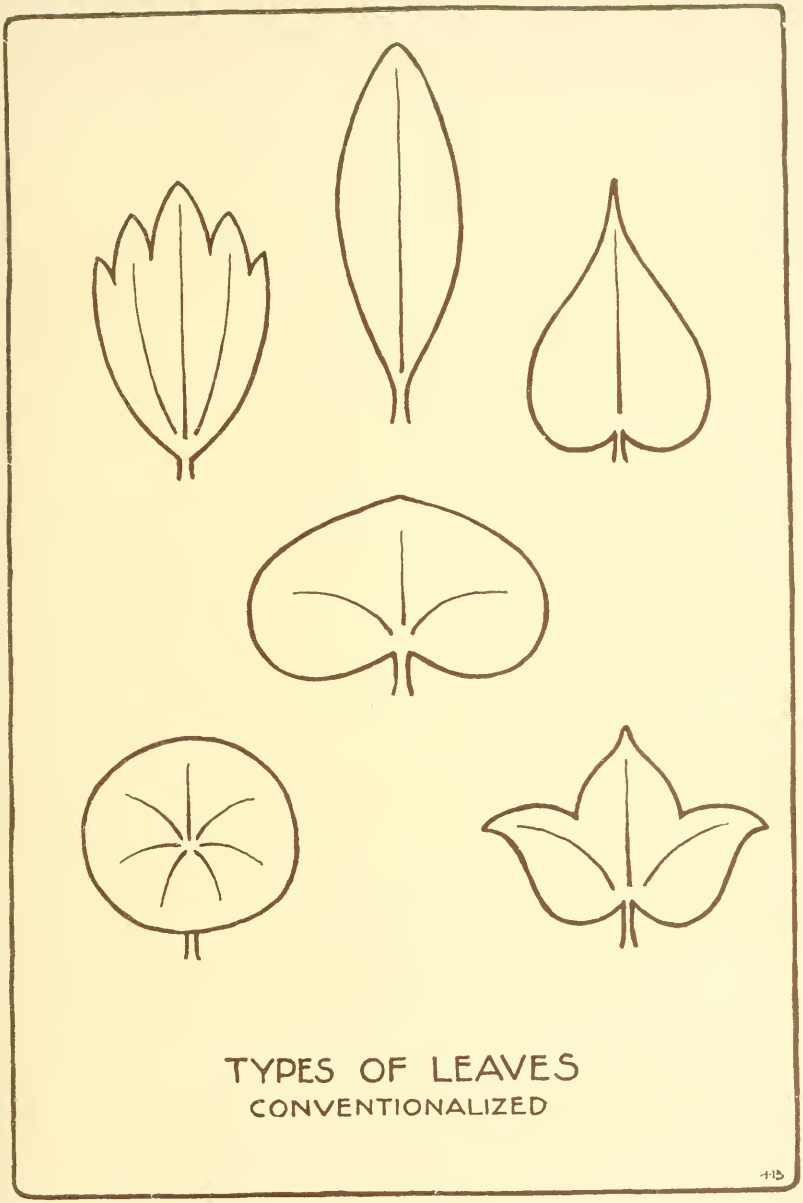

Plate XII

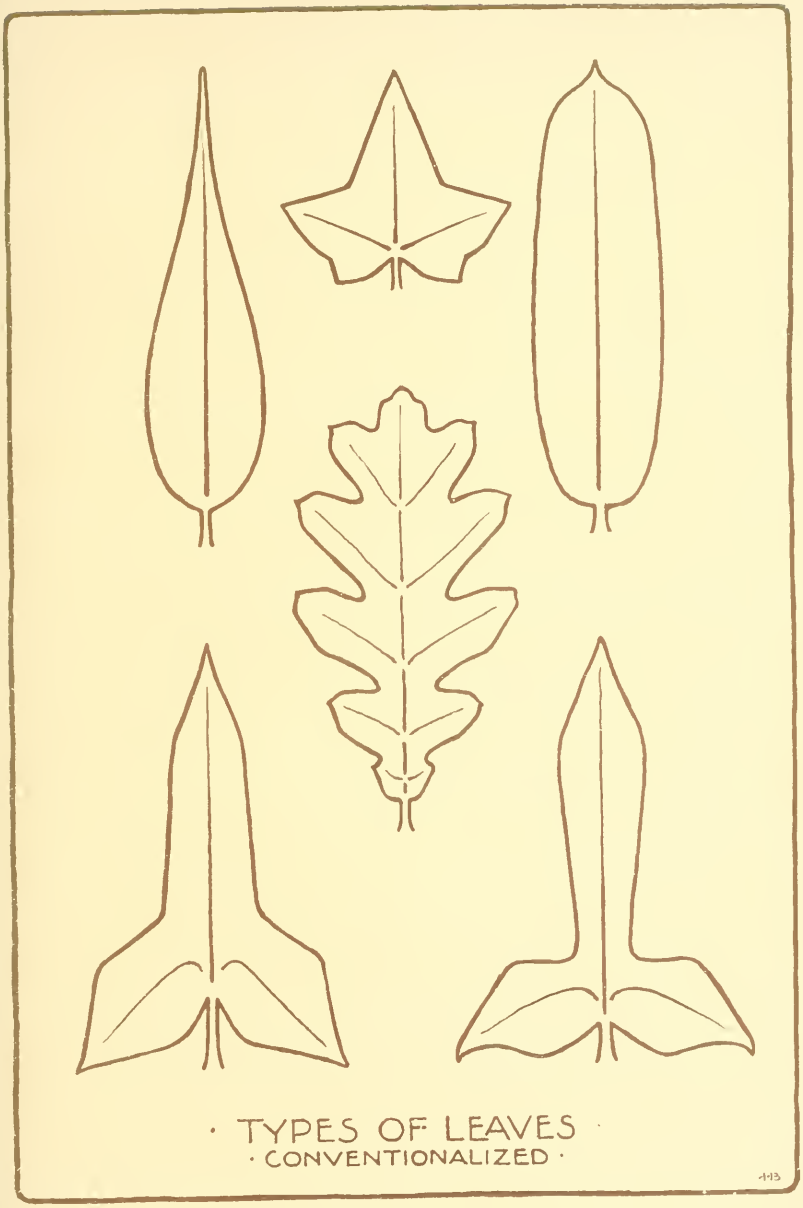

Plate XIII

29 In the formal style the natural principles of form and growth are taken as a guide and purely decorative shapes and arrangements developed upon such principles [pl. X–XIII, XVI].

30 Exercises should be given in each of these modes. The informal method, being but slightly removed from the pictorial, is perhaps the easier of the two and needs less guidance except in choice of subject. In the more formal style the student should be taught to conventionalize a few basic types of flowers in top and side views, adapting such drawings to several different space limits. Different forms of common leaves should be similarly studied [pl. XI]. Such exercise will give an appreciation of conventionalized ornament and develop some ability to produce it. Throughout all design employing nature motives one is constantly confronted with conventionalized forms. An appreciation of the beauty of these forms in the best art is a source of keen delight. The development of such appreciative power is distinctly worth while and may best be accomplished by individual attempts at conventional ornament.

31 Both abstract and conventional design are governed by definite rules of order which are inviolate. The most comprehensive of these are harmony, balance, rhythm, dominance and subordination. Such terms are too broad and general for students' use without repeated concrete interpretations by the teacher. These rules or principles of design should be studied at length by the teacher and their practical application to each immediate problem impressed upon the pupils. An earnest searching of the material in the list of books recommended in the Drawing Syllabus will be necessary for the teacher not equipped by art school training in this subject. It is impossible to give adequate instruction in the brief space of the handbook.

32 The vital factor of order and system, dependent upon mathematics, is so important that it would be well if every designer, young or old, could be made to respect it. The finest creations in the history of decoration have obeyed the laws of geometry however shrouded such laws may have been. Only in art's decline do we find the designer throwing away in his conceit the very factor that would be his work's salvation.

33 In the enumeration of kinds of decoration which follow, frequent reference must be made to these two types: the abstract and the conventional.

34 The first question confronting one in a specific problem of surface enrichment is whether it is desirable to decorate the particular surface at hand at all. Frequently it is much better to leave it untouched, save for preserving the natural beauty of its own texture and tone. If such texture and tone are not pleasing a finish in a plain color may prove to be by far the happiest result one can get.

35 Supposing, however, that surface enrichment is desirable, we must decide whether our design is to repeat over an unlimited area or to be used for surfaces with distinct size limitations. Design for unlimited surfaces is that which repeats regularly in all directions and is commonly known as surface pattern. In design for limited areas we have the border and the space inclosed by it.

36 In designing for either of these classes we are dependent upon the principle of recurrence or repetition. This leads to the consideration of the motive or unit of repeat. The unit of repeat in design may be either a single decorative figure or a group of them, or a definitely arranged growth on natural principles [pl. XIV].

37 In most high school work it is probable that the decorative repeating unit will be quite difficult enough without attempting group forms or natural growth for surface enrichment.

38 In designing single decorative figures, either for independent use or for repetition, their mass shapes must first be planned. These may then be divided up into details. These mass shapes may be straight line geometric forms or curvilinear or a combination. In the curvilinear forms we again must refer to the circle, the ellipse, and the egg form, which latter is by far the most productive of beautiful results. The egg form or ovoid by lengthening or broadening becomes a type figure from which may develop a myriad of beautiful nature types, more or less conventionalized. The proportion and contour of the whole mass, together with the harmonious relationship, adherence to nature's principles, and a happy play of the details composing it, are the deciding factors in the figure's claim to beauty [pl. XV, XVI].

REPEAT COMPOSED OF A SINGLE UNIT.

REPEAT COMPOSED OF A GROUP OF UNITS.

REPEAT COMPOSED OF A CONTINUOUS GROWTH . . .

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PLATE XIV

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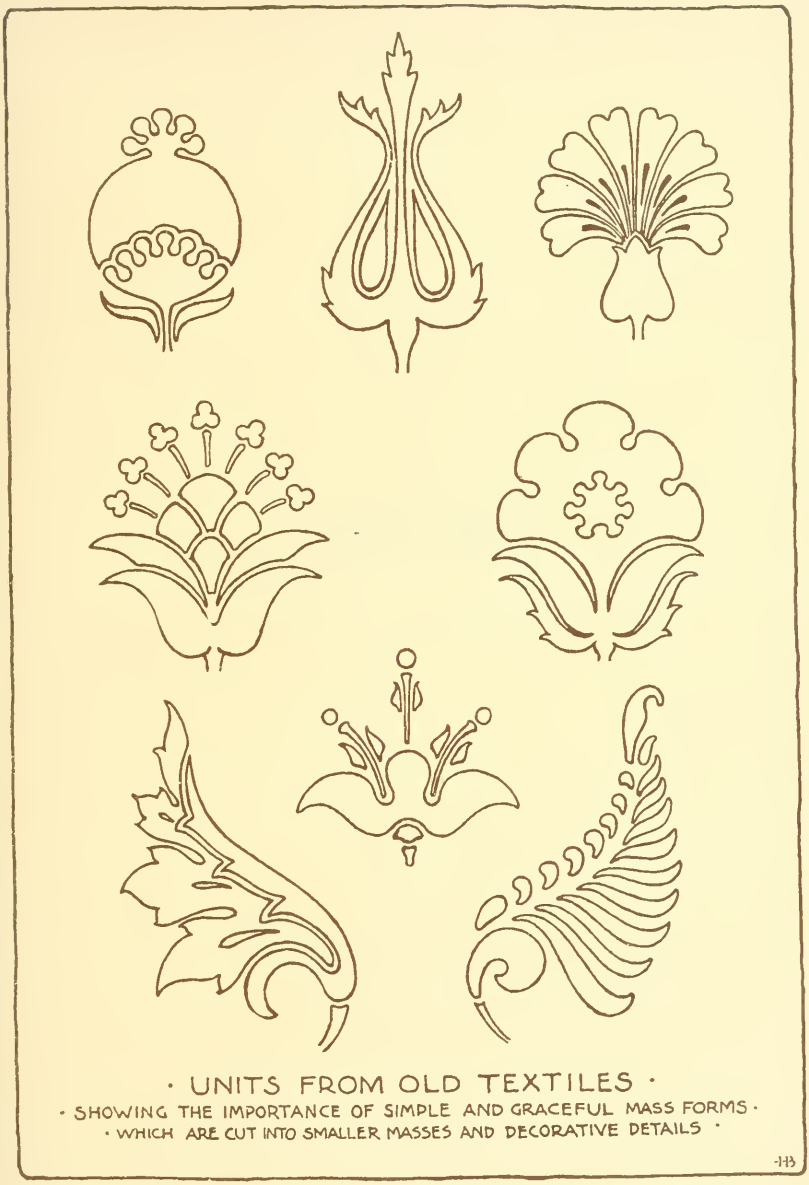
· UNITS FROM OLD TEXTILES ·
· SHOWING THE IMPORTANCE OF SIMPLE AND GRACEFUL MASS FORMS ·
· WHICH ARE CUT INTO SMALLER MASSES AND DECORATIVE DETAILS ·
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Plate XV

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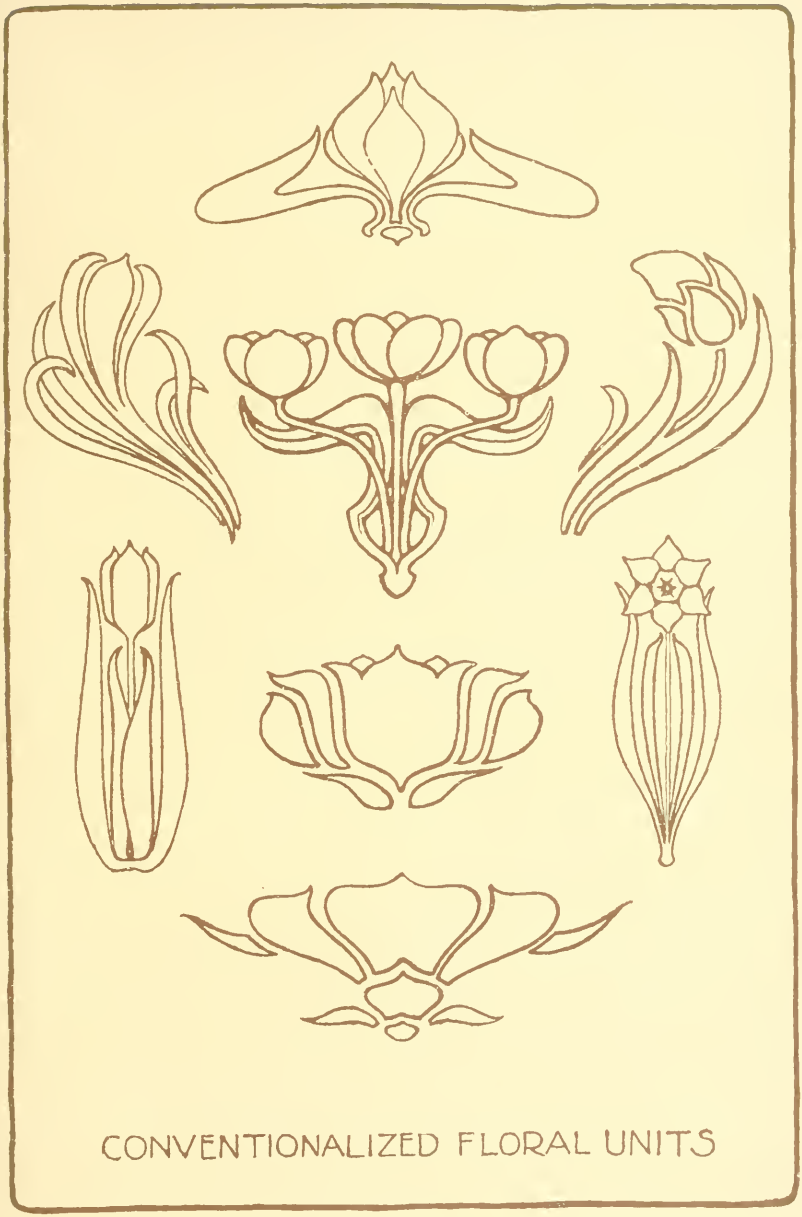

Plate XVI

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Plate XVII

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Plate XVIII

Plate XIX

Design for Unlimited Areas

"All-over" repeats or surface pattern

39 The designing of a pattern for surface repetition is a subject having many branches and beset with many difficulties. As in many other subjects in a secondary school only its rudiments may be touched upon. Pattern designing demands the originating of a unit of repeat and the use of a system of repetition.

40 The unit of repeat in pattern design for high schools should be a single decorative figure. Only in occasional instances owing to unusual talent or conditions can more involved units of repeat be produced.

41 The systems of repeat at our disposal are simple, consisting of arrangement of the units in vertical, horizontal and oblique rows. The size, shape and general character of the unit must determine such systems of repeat through experiment, the comparative amount of background to ornament and the rhythmic effect of adjacent units being the governing factors.

42 Some of the most charming surface effects come frequently from the simplest units, while elaborate units, most carefully executed, fail often of their purpose. Very much of the success and beauty of surface pattern, therefore, depends upon the rhythm over the surface rather than upon an individual form. This achievement of beauty through simple forms in orderly arrangement is the chief lesson to be gained from such exercises.

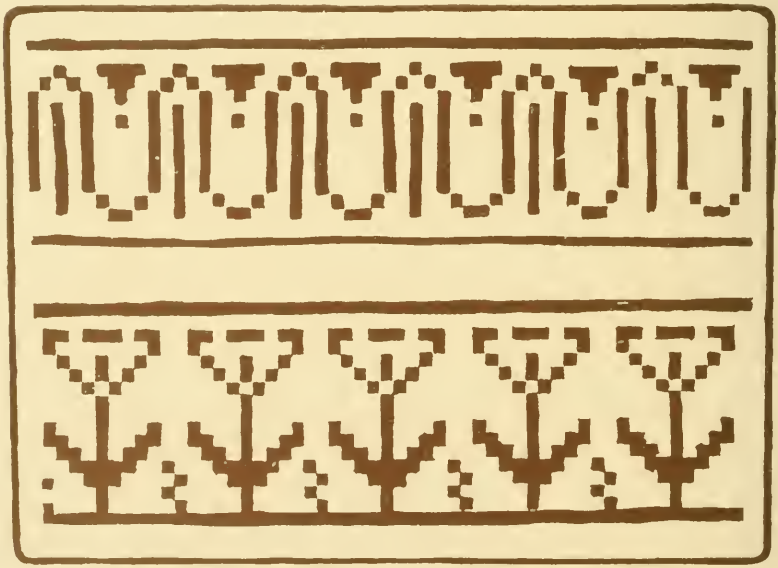
43 A word of caution, however, may not be amiss. There is a fascination in watching the development of a surface design by the simple repetition of a unit which causes in many schools far too much time to be spent upon it. There is, perhaps, no class of design which yields such happy immediate results from meager and almost hopeless material as the all-over pattern. The mere regularity of the repeat adds a feeling of unity, harmony and constructive strength which overcomes the weakness of many a unit. The feeble teacher is therefore tempted to produce a quantity of such designs whose results are showy but of little practical value.

Design for Limited Areas

The border. Abstract forms

44 The simplest border is a boundary or margin line or, as in the case of this printed page, a surrounding marginal space. Frequently such a plain line or space is the best thing one could have. It is of great importance to know when to stop. A further elaboration of the border would mean an inclosing band of several parallel lines. Upon the varying widths and spacing of these lines would depend the amount of beauty in the final effect. Additional changes in these simple elements would lead to a treatment of the corners of the frame where the lines could be interrupted or interlaced or stepped in or out. The center of each side also could be varied in a like manner. Finally the lines would be continuously interrupted or stepped or interlaced [pl. XX–XXII].

45 Instead of continuous straight lines a border may be composed of abstract block forms following each other in repetition or alternation, the abstract forms to be similar and harmonious in



· UNITS SUGGESTING FLOWER FORMS · DERIVED FROM SQUARES ·

FIGURE 4

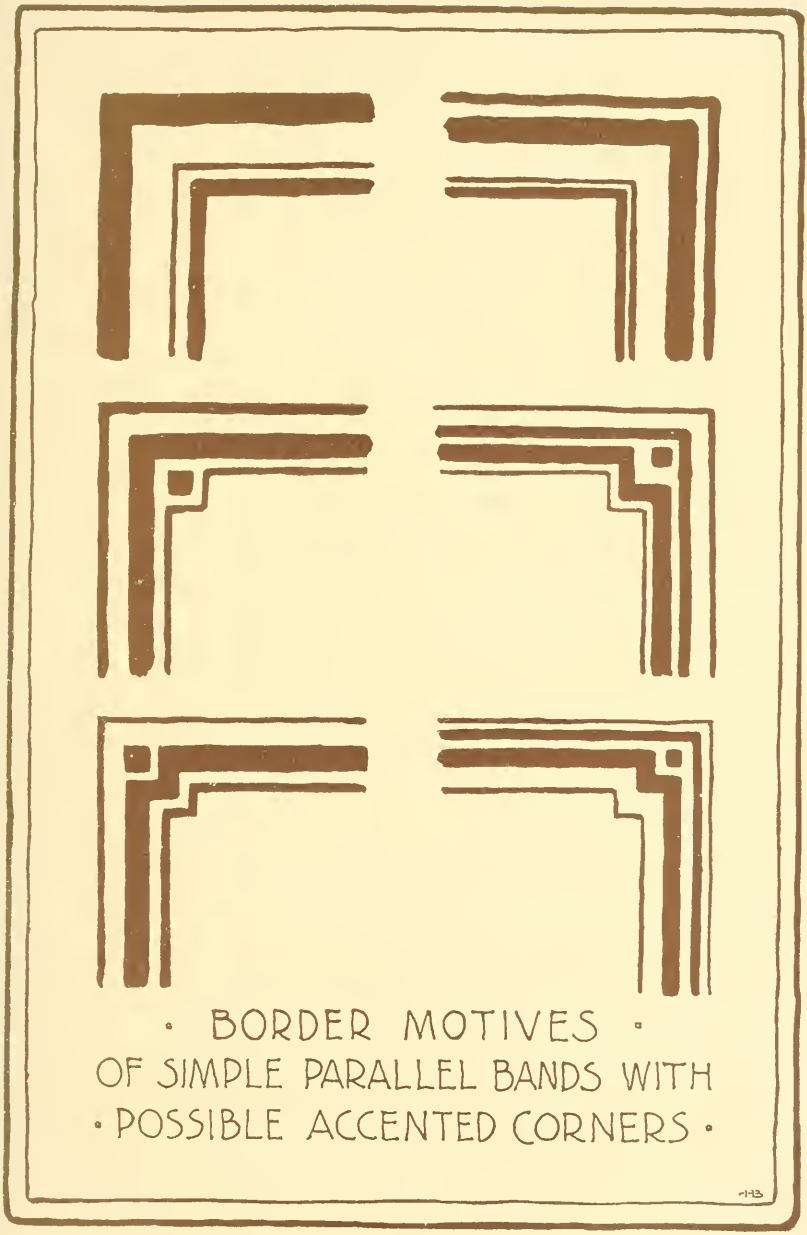

· BORDER MOTIVES ·
OF SIMPLE PARALLEL BANDS WITH
· POSSIBLE ACCENTED CORNERS ·
HB

Plate XX

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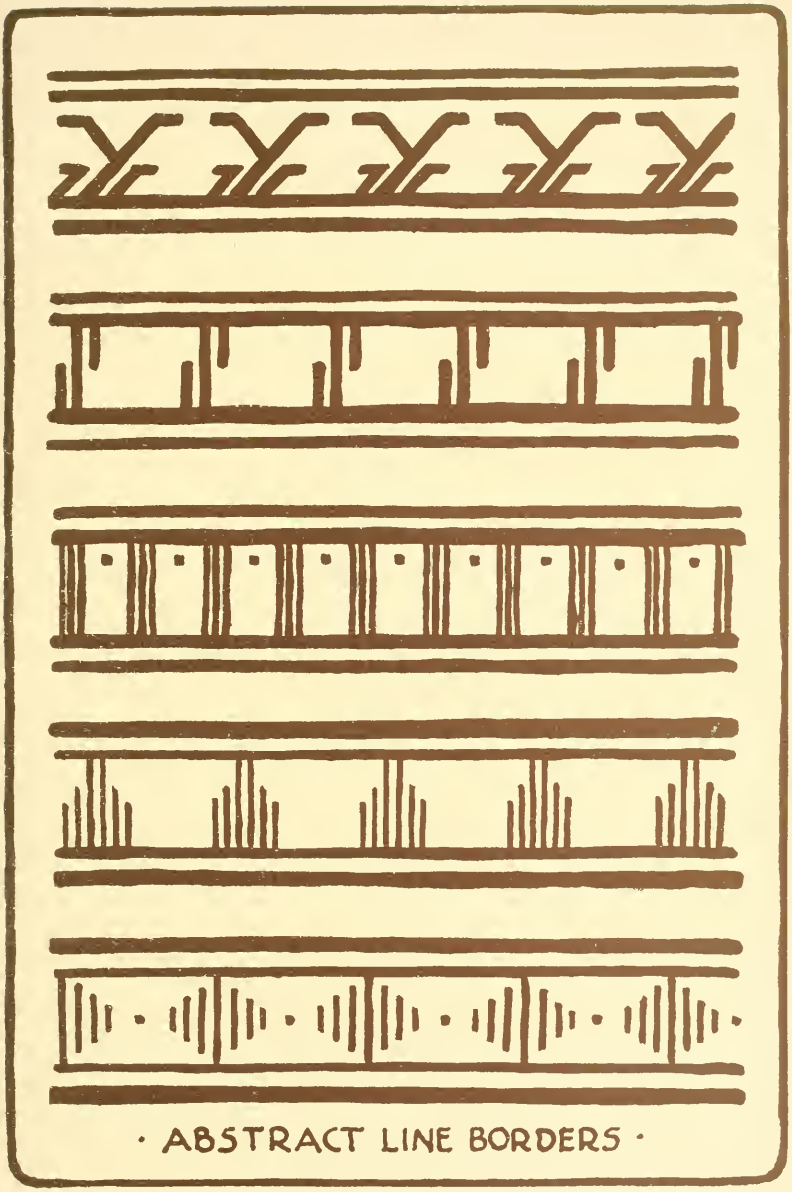

Plate XXI

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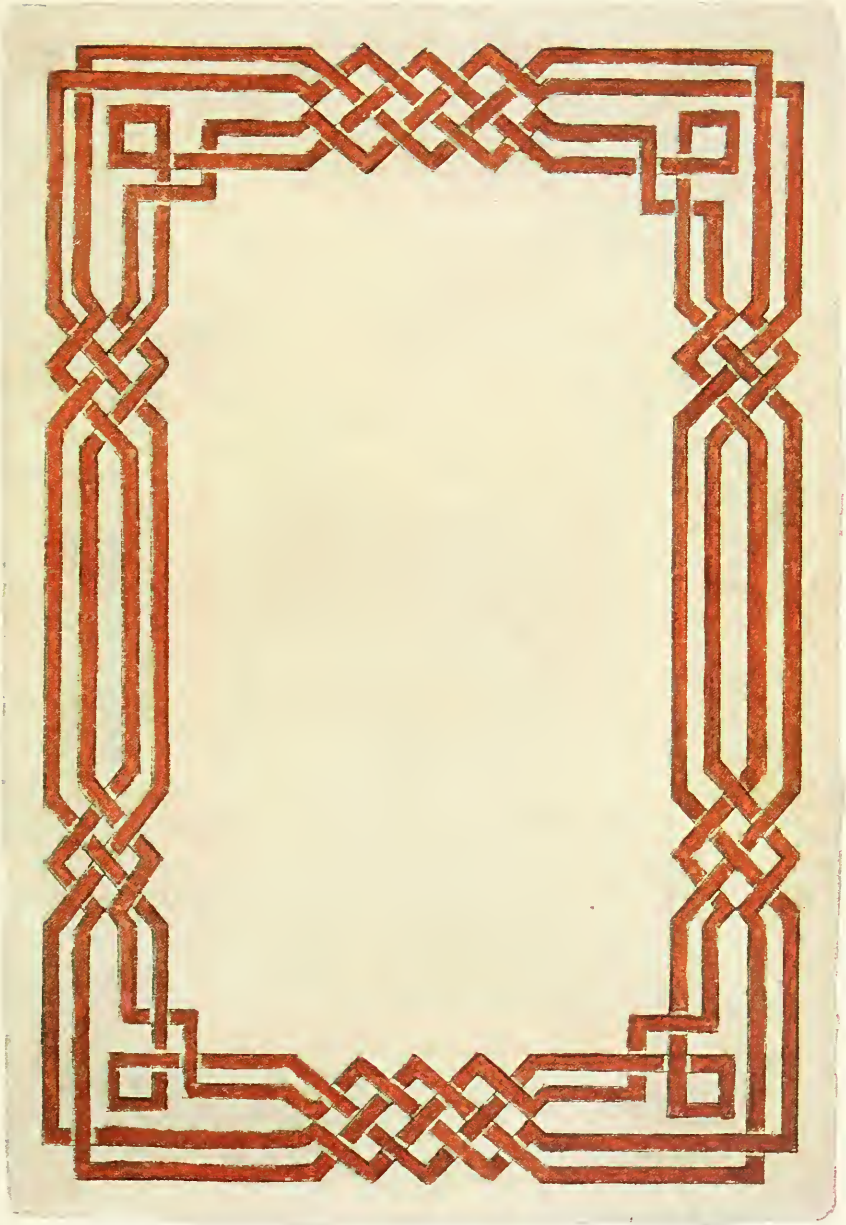

Plate XXII

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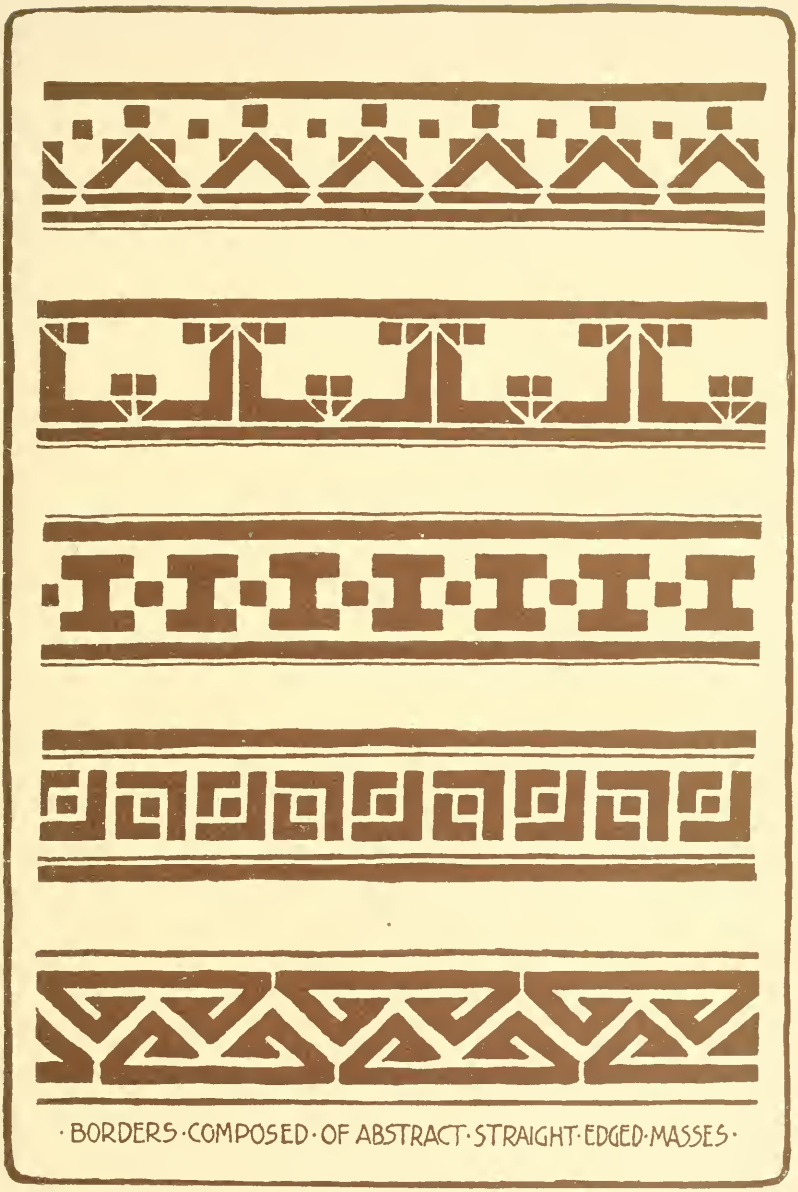

PLATE XXIII

shape with careful arrangement of the corner forms and those in the centers of the sides. The use of squared paper as an underlay is very helpful in planning such work. Borders of a circular shape are aided by a network of radial lines and concentric circles which correspond to the verticals and horizontals of the rectangular frame above mentioned [fig. 4, pl. XXIII].

46 In devising borders which employ curved lines we are obliged to ask what the possibilities and limitations of curved lines are. The simplest curves may be described as the "C" and the "S" forms or the simple and compound. In both of these forms it is necessary to remember that the arc of the circle is under most conditions the least pleasing of curves and that a curve whose controlling law is the least obvious is usually the most fascinating, provided it has a controlling law. Thus an ovoid is more pleasing than an ellipse, and an ellipse fascinates more than a circle. This, however, must not be taken as a condemnation of the use of the circle when such a form is the one best adapted for our purpose. The preponderance of the egg or ovoid form in nature together with that of the parabola, or curve of force, indicates how much beauty is dependent upon them.

47 In using curved lines for borders the vital points, it must be remembered, are the corners of the frame and the centers of the sides. Either or both of these sets of points must be considered and treated successfully. Abstract curves may start from the corners and meet in the centers of the four sides or starting at the latter points cease at the corners. Again our curves may arise at the center of the bottom and swing around the corners and sides to meet at the top. These are some of the most obvious arrangements of curved lines in border arrangements. The further breaking up of the areas left on either side by the curve may be accomplished by branches to the main line which should in most cases be tangent in the points of junction [pl. XXVI].

The border — conventional forms

48 The use of conventional forms will be found to be not difficult if such forms are adapted to the general arrangements above

FIGURE 5

enumerated for abstract forms. A conventional leaf or flower can be modified to fill almost any area and the planning of a conventional design therefore becomes at first the plotting of an agreeable arrangement of abstract areas, which will be changed to conventional leaves or flowers. By a judicious emphasizing of the constructive lines of the form to be decorated and a sparing rather than lavish use of conventional shapes in the parts calling for an appearance of strength the best results are obtained.

Plate XXIV

Plate XXV

Plate XXVI

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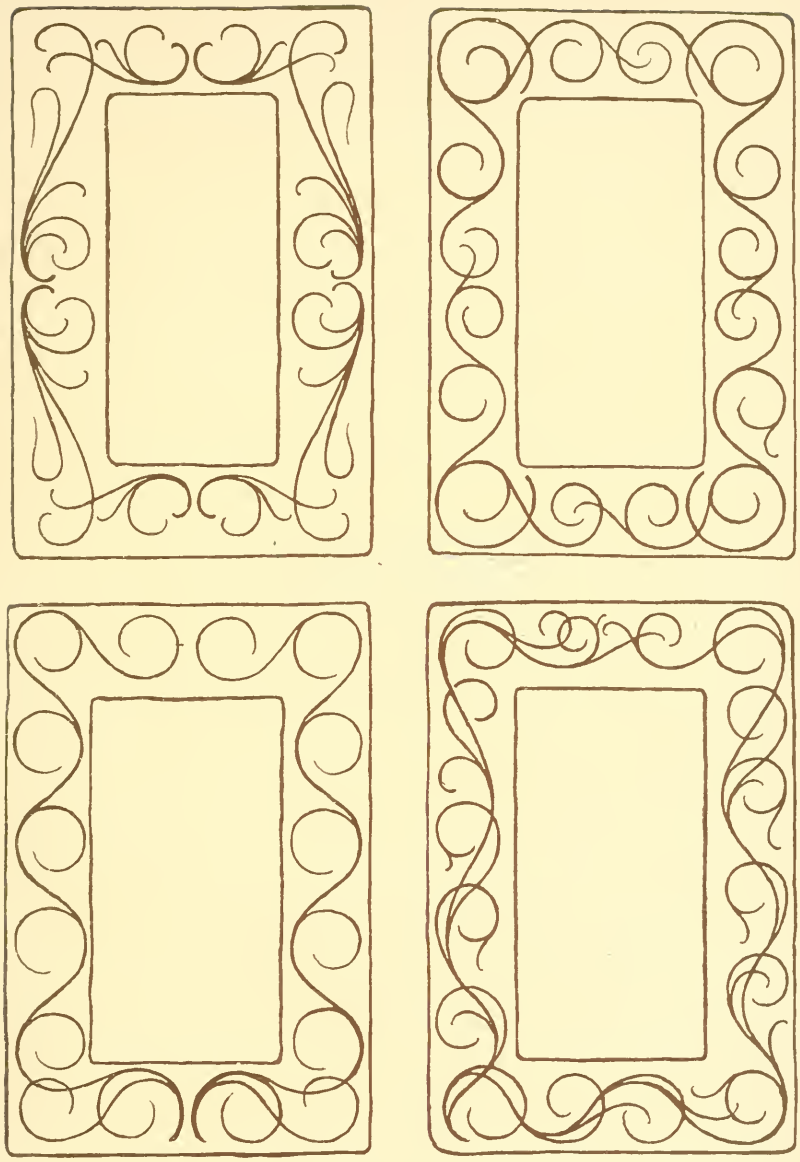
ASTOR, LENOX AND
TILDEN FOUNDATIONS



Possible border framework for floral growth

PLATE XXVII

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Plate XXVIII

Inclosed areas

49 The foregoing statements regarding designs for borders, using either abstract or conventional motives, apply with but few necessary changes to the decoration of inclosed areas or the space within the border. Again must we decide whether or not it is best to leave it quite alone, letting the border tell the complete story.

50 In the decorating of our inclosed space or panel, we may proceed in several ways, breaking up our surface into smaller abstract areas which may remain the final effect or be further elaborated by the adaptation of conventional nature forms.

51 Our decoration may develop from the corners or middle points of the border of our panel and spread inwards toward its center, or it may develop from the center of the area and radiate outward. Again a vertical center axis may be the backbone of the design which finds here a source of growth upward and to the right and left. A single decorative figure, frequently improved by being placed somewhat higher than the actual center, forms an attractive feature within the border, surrounded by a plain surface as a background. Certain types of ornament such as festoons, escutcheons, medallions, elaborate foliage and other details from historic motives are almost useless in the grade of work before us. Two types remain for our use over the panel. One of these is a continuous surface pattern carried uniformly to the inner border limit, and the other is beautiful lettering.

52 Free-hand lettering should be constantly employed in the high school not only in the drawing room but on every opportunity where such a use would be an advantage. The beauty of good margins, well planned masses of letters, carefully executed initials, capitals and small or "lower case" letters should be impressed upon the classes. The roman alphabets shown in plates XXIX and XXX furnish material for constant practice, in leisure moments as well as in the drawing lessons. All vagaries must be discouraged and suppressed. Study of the books recommended in the Drawing Syllabus under "Lettering" is very important and will provide necessary guidance. Large charts of simple, useful roman alphabets should be about every drawing room for constant though unconscious absorption and inspiration.

FIGURE 6

An example of well formed and well arranged letters

Materials and Technical Methods

53 The materials and methods recommended under the head of representation are applicable with few exceptions to problems in design. In black and white and monochrome work the lead pencil is by all odds the most useful all-around medium. Charcoal does not prove satisfactory in most cases. Brush and ink are capable of producing brilliant results, which may be further enhanced in many cases by using tones of neutral gray with the black. Pen and ink may be employed to better advantage in decorative work than in pictorial drawing owing to the freedom from the necessity of realistic modeling and gradations of tone. Less experience and dexterity are required in producing a uniform decorative ink outline around flat-shaded forms than in interpreting the accidental shapes and textures of actual objects. It is hardly necessary to caution the teacher that writing ink should not be used. The best bottled

Plate XXIX

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Plate XXX

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India ink, a first quality of smooth, hard-surface bristol board and some good pens are the essential materials to satisfactory work. Good pen and ink designs may be reproduced by photo-engraving at small cost for publication.

54 In handling color we find that water color, which is usually too difficult for realistic still life and flower drawing is most satisfactory, either in monochrome or full color, for design.

Crayons are also a desirable medium capable of a wide range of effects. It is earnestly recommended that experiments in the combining of different mediums and materials in single problems be tried both by teachers and pupils. Harmonious results, as happy as they are unexpected, are frequently arrived at through such experiments, greatly enhancing the maker's personal pride and interest in the work.

FIGURE 7

A simple, effective surface pattern from an old Chinese enamel

Conspectus of the Subject of Representation

- **Representation: Drawing of the accidental appearance of objects. Study of proportion. Principles of perspective and composition**
  - Type solids, plane and curved surfaces
    - Cube
    - Prism
      - Triangular
      - Square
      - Hexagonal
    - Pyramid
      - Triangular
      - Square
      - Hexagonal
    - Cone
    - Cylinder
    - Sphere
    - Hemisphere
  - Theory of perspective — List of principles
  - Common objects based on type solids — Boxes, chests, benches, tables, chairs, buildings, towers, jars, vases, barrels, pails, dishes, utensils
  - Drawing from memory, dictation or description of above forms
  - Perspective rendering of working drawings
  - Nature drawing
    - Character, pose and action
    - Plants
      - Typical trees in masses
      - Branches, sprays, leaves
      - Fruit, flowers, seed pods, and details
    - Animals
      - Common animals, birds, insects, fishes and their details
  - Technical methods of using drawing material in outline, light and dark, and light and shade

REPRESENTATION

55 A satisfactory course in representation should include and cover the following requirements:

a Drawing from type solids having plane and curved surfaces and common utensils of similar shapes. These should be studied in various positions, both singly and in groups, in outline, light and dark, and light and shade.

b Theory of perspective

c Drawing from dictation, description or memory of objects mentioned in section *a*

d Drawing in perspective from working drawings

e Drawing from plant and animal forms and their details

f The principles of arrangement or composition of the objects of which a picture is made up

Drawing from Type Solids

56 In considering this subject it is well to recall the important place given to the type solids some 30 or more years ago and their gradual exclusion during the following years from our public schools in favor of everyday objects of allied shapes. The change has been based upon the theory that objects of interest to pupils and teacher will be more convincing as lesson material than bare blocks of theoretical form. Our American experiment of teaching object drawing without the type forms has been tested for some years and should be considered on its merits. If pupils can draw better without contact with type solids their absence is a benefit. If the contrary is true they should be, in some measure at least, restored.

57 Direct comparison of American class work with that of English and continental schools in recent conferences abroad offers con-

vincing testimony that our pupils are not taught to draw with the skill, accuracy or thoroughness of European pupils. The only remedy to apply is to drill more insistently and carefully on drawing pure and simple until a fair percentage in every school can represent reasonably well such common articles as a box, book, cup or saucer placed in any position.

How best to attain this skill in drawing still remains in America largely a personal question variously answered by many teachers. It is safe to say, however, that the abandonment of type solids has not brought about any greater skill in drawing, and a judicious return to them as foundation material for object drawing is therefore earnestly recommended. This should not be interpreted to mean that such solids must dominate the course as formerly or be used to the exclusion of more interesting things.

58 Pupils who have received adequate instruction in the grammar grades should at an early stage of the high school course be able to draw the foreshortened appearance in any position of such fundamental plane figures as the triangle, square, rectangle, hexagon and circle. From this knowledge may develop the study of solids bounded by such surfaces as the cube, various prisms and pyramids, together with the cylinder, cone and sphere. These should be practised until their construction is thoroughly understood. No policy of slighting or evasion on account of supposed dryness of the subject will be found to be a satisfactory substitute for honest drill on these basic solids. With a reasonable familiarity with the principles of such forms the pupil can study the more complicated objects of daily life with confidence.

59 In drawing from any object or group the pupil should start with a thoughtful survey of the whole as to relative width and hight including the desired background and foreground.

60 The position of the paper is to be decided and the location and size of the drawing on the sheet. These first steps in starting the drawing are so constantly ignored or violated that too great emphasis can hardly be given to them.

61 The proportion of the whole object or group is to be indicated lightly and massed in by blocked forms, using straight lines as boundaries connecting all exterior corners. The student should

PLATE XXXI

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imagine the object or group as inclosed in a shell or wrapping, which ignores minor depressions but gives all the plain features and positions for comparison [pl. XXXI].

62 Unaided visual judgment should always precede mechanical tests. All the usual tests with pencil, thread, adjustable card angles and frame openings should be made clear to the students. In applying tests they preferably should occur in the following order during the progress of the drawing.

Whole hight compared to whole width
Comparison of horizontal levels of important points
Comparison of horizontal distances of important points
Comparison of vertical relations of important points
Comparison of vertical distances of important points
Comparison of oblique and diagonal relations and distances of important points

63 Further development of the drawings will bring out the perspective details of each object or part which, if the preceding work has been well checked, will fall into proper position and relation with the adjoining parts.

64 A review of the above tests together with careful comparisons of perspective angles by means of two cards should be sufficient for an accurate representation of any group.

Perspective Principles

65 The best method of teaching perspective principles, if we accept the verdict of a number of successful teachers, is that of deduction of such principles during the drawing of actual objects. Courses in theoretical perspective alone involving the technical and mechanical diagrams, distance points, etc. are usually misleading to the younger high school students and frequently miss the very end they were supposed to attain, namely skill in the drawing of real things. Such instruction should be given in the latter part of a high school course, and only when there is sufficient time. In the study, therefore, from type forms or other objects should be brought out the theory and application of perspective principles as enumerated in the following list.

The picture plane
The horizon line
The center of vision
The line of sight
Vanishing points
Parallel perspective
Angular perspective
Oblique perspective
Convergence (of parallel lines or edges in various positions)
Foreshortening (of lines and planes)

66 Mere ability to give a definition or explanation of any or all of these principles is not indicative of intelligent power to put them to use, which is the only final test.

FIGURE 8

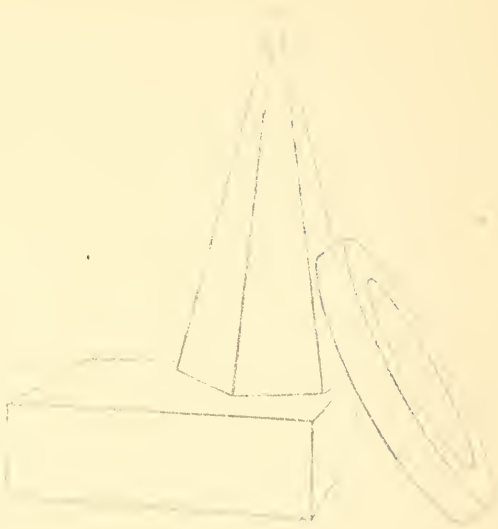

Plate XXXII

Plate XXXIII

Plate XXXIV

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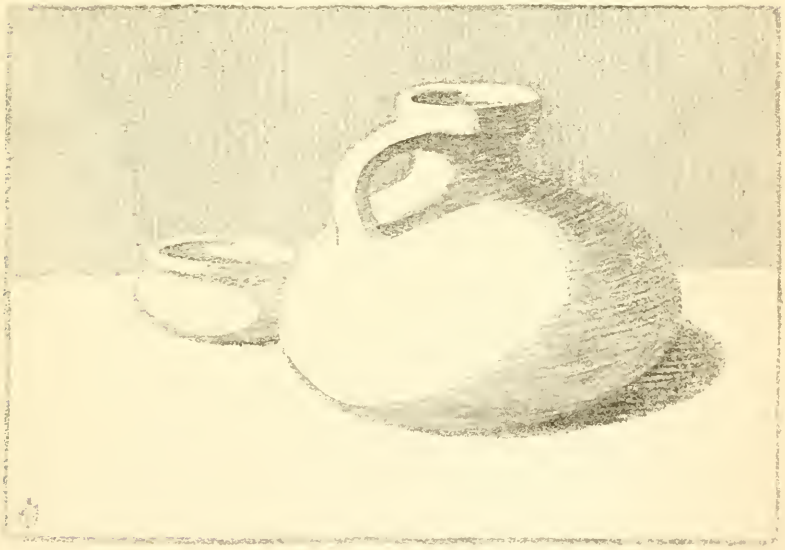

Plate XXXV

Plate XXXVI

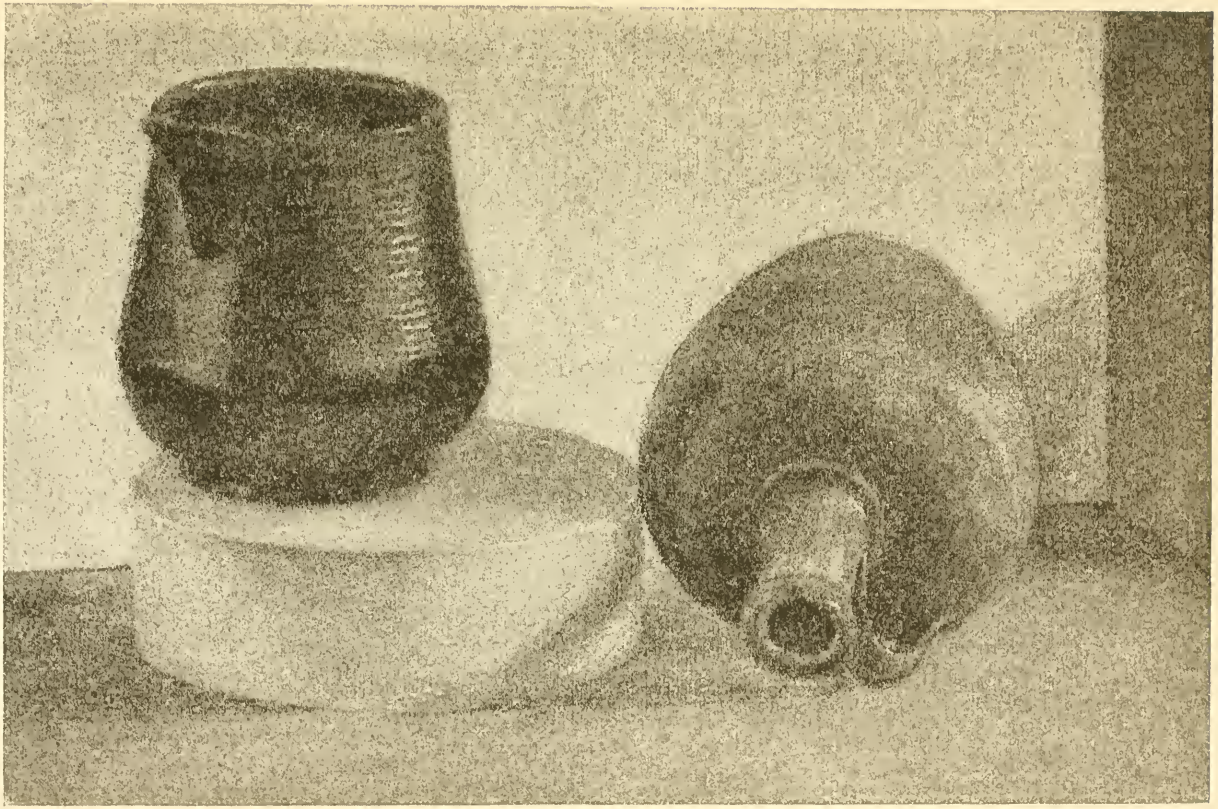

Plate XXXVII

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Drawing from Common Objects

67 An approach to the drawing of common objects through a study of type forms has been recommended in the section of the syllabus under that heading. That such an approach is invariably necessary or that such type studies must be pursued for any uniform length of time for all schools would be an absurd claim. To the individual teacher must be left the decision of how to make clear the construction and principles governing the appearance of any form.

68 Lips, spouts, handles, feet and other projecting details of common objects usually puzzle the student. They should be explained and illustrated as to their constructive relation to the solids, in various positions by the teacher with blackboard drawings.

69 The method of procedure in laying out an object drawing has been explained in a preceding paragraph.

70 In the completion of such a drawing, one may confine himself to outline or use light and dark, light and shade or color.

71 In outline drawing the only satisfactory result is obtained by a proper emphasis of the line at various places [pl. XXXII]. It is difficult to give a universal rule for accenting an outline drawing. Excellent examples of such accenting may be seen in books recommended in the bibliography in the Drawing Syllabus [fig. 1, 8, pl. XXXIII–XXXV, XLIV].

72 The term "light and dark" as applied to this work means the giving to each part of a drawing a flat tone corresponding to its color value without reference to actual effect of light, shade or shadow [pl. XXXVI].

73 "Light and shade" involves the truthful representation of the actual appearance of the group with background and foreground and includes all variations in value due to accidental causes and local conditions, as well as color and texture of materials [pl. XXXVII]. A thorough presentation of this whole subject can be found in the works on "Light and shade" listed in the Drawing Syllabus.

Drawing from Memory, Dictation or Description

74 Ability to draw correctly from objects should be augmented by the power to represent such forms from memory, imagination

or dictation. Such ability can come only through the mastery of the fundamental principles of perspective studied in type solids and allied common forms, coupled with frequent practice in quick sketching without the required objects in view.

75 After an intelligent study of these things it should not be considered too difficult a task to draw in any position a cube, prism, cylinder or cone. Changing or elaborating them into forms of vessels, utensils, furniture or buildings is but a step more difficult.

Perspectives from Working Drawings

76 The ability to depict any object in perspective from the data in a working drawing is of the greatest value. As a training in drawing it develops new power. It is useful in giving a clear impression pictorially of the object shown in the mechanical views [pl. II–IV].

77 While the perspective principles underlying this phase of the subject are, of course, the same as in any other drawing, the manner of approach is somewhat different. Adequate treatment of this phase of drawing will be found in books on this subject given in the Drawing Syllabus.

Nature Drawing

78 The study of natural forms should be pursued with a threefold motive.

a As another means of learning to draw

FIGURE 9

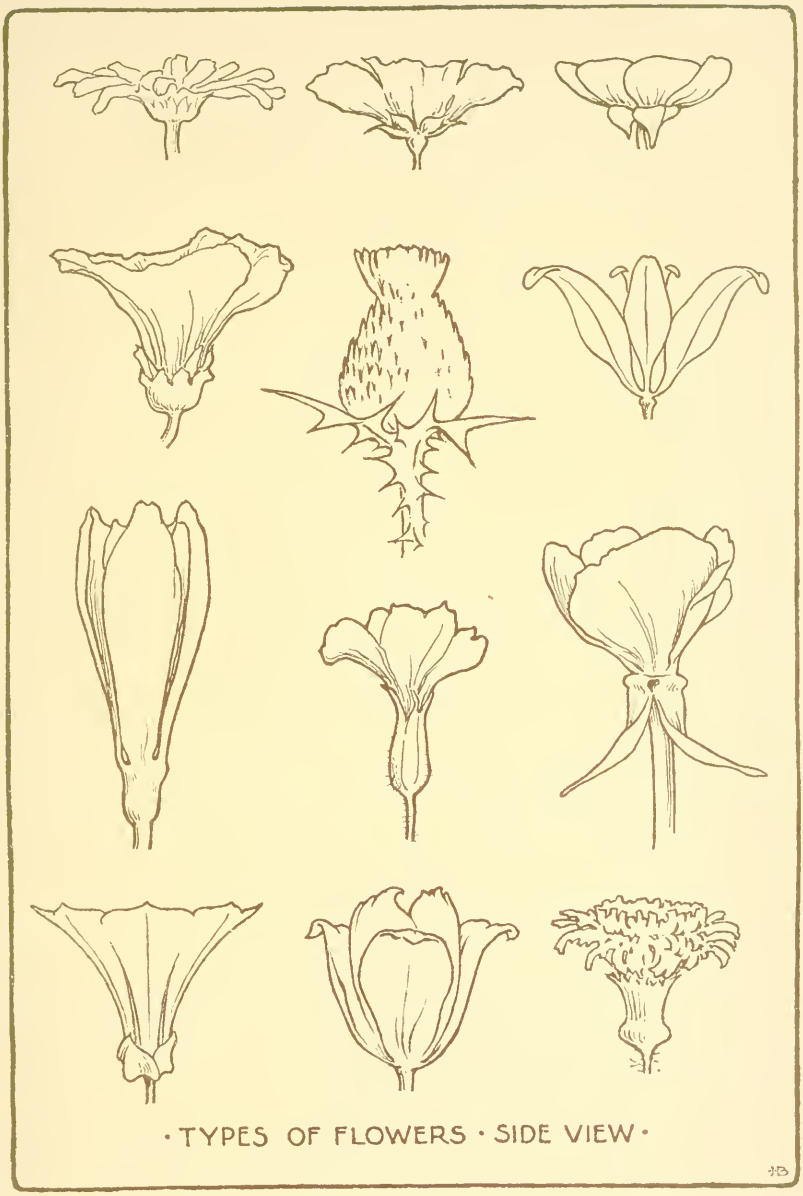

Plate XXXVIII

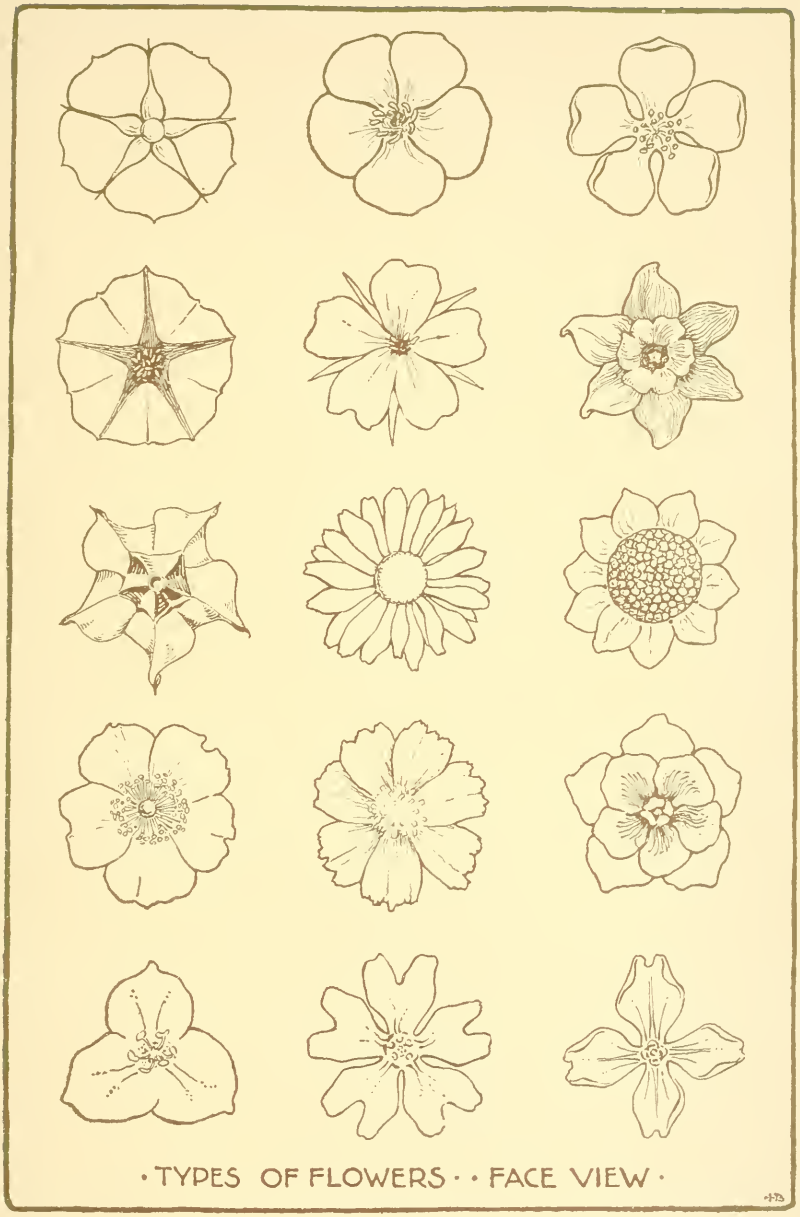

Plate XXXIX

PLATE XLI

Plate XLII

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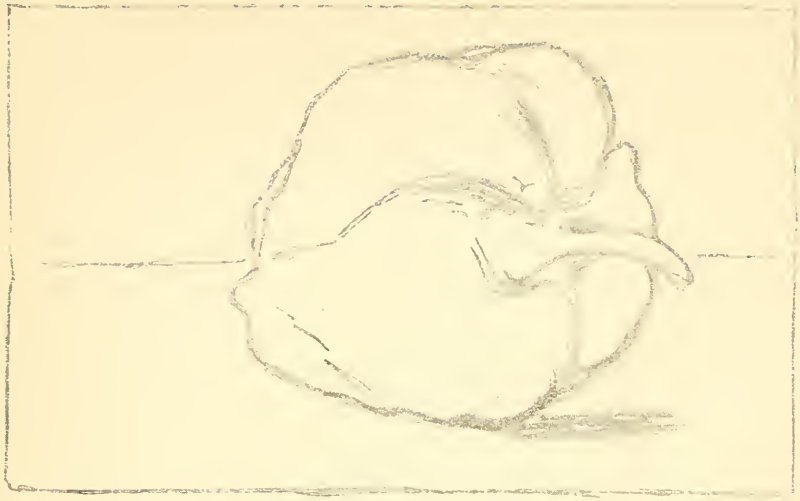

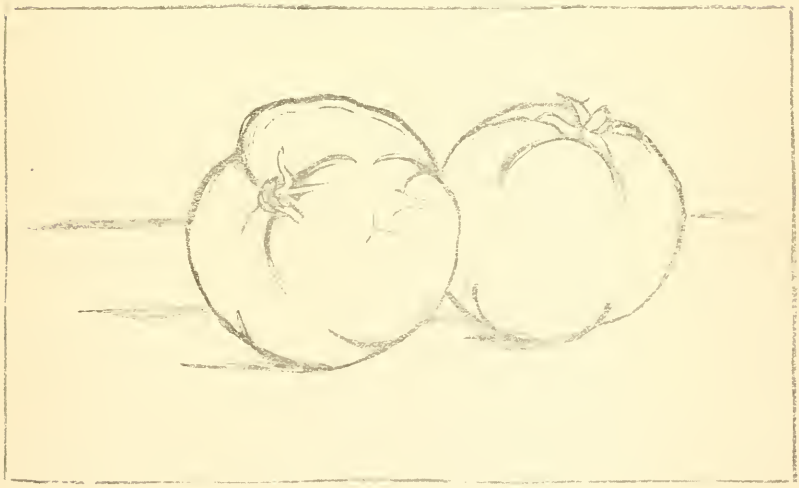

Plate XLIII

b For the refining influence due to the careful study of beautiful forms

c As a source of decorative material for use in design

79 There is almost always a conflict over the two methods of drawing nature forms in schools where drawing and biology are both taught. It seems hardly necessary to insist here that the motive for the artist and designer should be one of those mentioned above and not that of picking out scientific details. Each method is important and must be followed seriously within its definite boundaries. There is no reason why a high school student should not make both biological drawings and nature drawings from the art side, each in its proper spirit and technic.

80 The specific aim of nature drawing from the esthetic side should be the grasp and graphic interpretation of the character and beauty of nature's forms. Mere microscopic exactness is of no value here. The vital force, the pose, the grace or the delicacy of any subject may be gained by few lines or many, in one medium or another, but to give them unmistakably should be the object of nature drawing [fig. 9, 10, pl. XXXVIII–XLIV].

81 The correlation between the drawing of nature forms and the study of type solids and common objects is closer than many imagine. Such correlation should be shown to pupils wherever possible. Geometric deductions should be drawn from plant studies and parallels pointed out between foreshortened leaf and other nature forms and typical plane or solid figures similarly placed. Flower and bud forms ally themselves to the cylinder, cone, hemisphere or egg form, whose axes bear definite relations to their stems. Petals, veins, corolla, pistils and stamens almost invariably show their geometric character and disposition, which should be exemplified by simple type form illustrations.

82 Study of actual objects may be augmented with much profit by careful study and some copying from good prints. Illustrative material ought always to be in view, and reproductions of similar drawings by the best artists repeatedly shown to the students.

83 Nature drawing should cover the study of the silhouette shapes of beautiful forms. Characteristic types of our common trees are excellent material for study of masses. More detailed

work naturally follows from branches and sprays to individual leaves and flowers. Silhouette drawing with the brush can by no means replace the more important pencil studies of the same sub-

FIGURE 10

jects. Earnest effort to interpret the vital truths though ignoring the minute or needless details will be amply repaid. The field of animal life offers an equally wide range of study though the materials are perhaps less available [pl. XLIV]. Excellent pictures are procurable where living forms or prepared specimens can not be obtained and are of great value in this nature drawing.

84 A word of caution may be given here against regarding these studies as finished pictures. Their purpose should be that of earnest searching for beautiful shapes, character of growth, arrangement of color and nature's adaptation of materials to definite uses. A keener insight into these phases of the life forces about us through drawing is the aim of this part of the study rather than a few sketchy impressions of spring or autumn flowers.

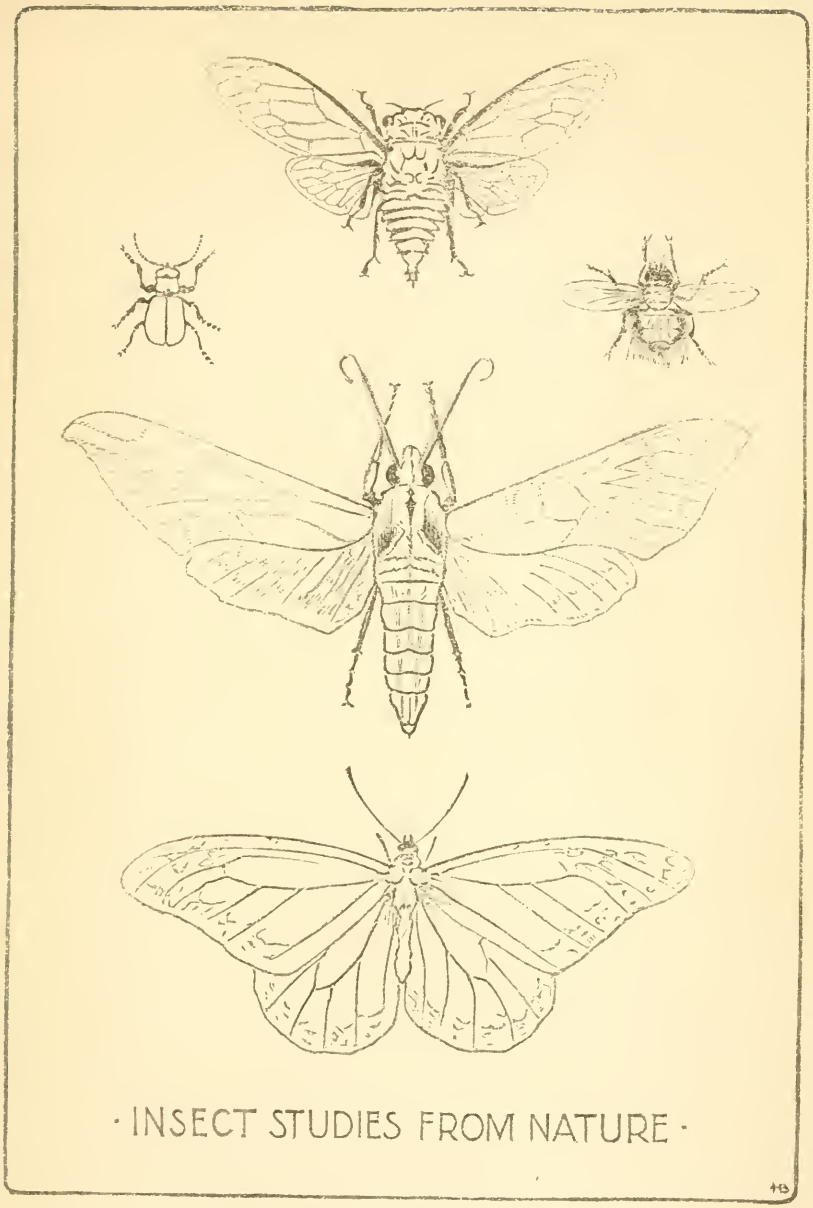

PLATE XLIV

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MATERIALS AND TECHNICAL METHODS

85 The number of mediums from which the high school teacher of drawing may choose is quite extensive. This adds an unfortunate danger in the case of the poorly trained instructor, who is led to scatter attention over all mediums with no thorough knowledge of any one.

86 No medium can take the place of the ordinary lead pencil. For careful, detailed work a somewhat hard grade is desirable. A medium grade is best for all ordinary drawing, while a soft or very soft lead is needed for shaded work.

87 Methods of pencil technic are numerous. They range from the accented outline drawings to the most careful rendering of light and shade in full values. Various methods of pencil technic can be studied profitably in the books recommended in the Drawing Syllabus and in the wide and ever changing field of magazine illustrations. A word of caution must be given against mannerisms in pencil shading. The aim of such work should be to approximate a truthful appearance of the subject, not dashing, sketchy or conspicuous pencil strokes. A broad gray line is not always desired nor is the flat clapboard or slab stroke made by a chisel-shaped lead. Ability should be cultivated to lay a smooth gray tone of any value in which the effect is flat, without smart brilliancy or evidence of clever or mannered strokes. If any particular form or texture requires a special modeling the method of shading and the shape of the lead most appropriate should be used. Lead pencil should be the medium of all others to be studied seriously in the high schools.

88 Much pleasure with increased enthusiasm in work and good results comes through the use of a colored crayon instead of the ordinary lead pencil, finishing the drawing in one color throughout.

89 Work in black drawing ink with brush is excellent for the study of nature forms and decorative effects. The use of several values in monotone wash drawings is also desirable. Pen and ink drawing is to be but cautiously resorted to for elementary work. It is of little use in a class problem. Copies from pen and ink drawings of popular illustrators have almost no educational value, owing to the usual striving of the beginner to imitate facial expressions,

mannerisms of shading or other superficial characteristics in the work of the artist rather than the big fundamentals of the drawing.

90 Charcoal is a most useful medium both in "light and dark" and drawings in full values, and is too well known to need extended mention. Its use in brief drawing periods where work has to be resumed for several widely separated sittings is somewhat discouraging owing to its perishable character until "fixed" and the amount of dirt that an indifferent or ill disposed student can create. Well executed charcoal drawings colored by water color washes are a desirable method for more advanced students. The use of full water colors is very difficult as a medium for conscientious still life drawing in the high school. They are admirable for sketches and decorative work, and have beautiful and distinctive color quality.

91 Colored crayons, being so much more adaptable to the many restrictions of the high school drawing room, are now used in many schools more extensively than water color, both in representation and design. They are capable of various effects of technic, are clean, quickly distributed and collected, need no drying and can be handled without need of "fixing" as in charcoal.

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